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Original Communications.

THE PHYSIOLOGICAL ACTION OF CAFFEIN AND THEIN FROM EXPERIMENTS UPON THE LOWER ANIMALS.

By R. AMORY, M.D., Longwood.

THE substances, called Thein, discovered by Oudry, and Caffein, discovered by Runge in 1820, are analogous in their chemical and physiological action. These substances are very slightly soluble in cold water, ether or alcohol, and are fusible at a temperature of 377° Fahrenheit. They are more readily soluble in the strong acids, though decomposed by muriatic acid. With regard to their solubility in the fluids of the body, I made the following experiments. I mixed equal parts of warm water and fresh blood, which dissolved a small quantity of caffein, about one quarter of which crystallized out on cooling. Of five grains dissolved in warm gastric juice, mingled with an equal quantity of warm water, about one twentieth crystallized on cooling. I propose to illustrate the therapeutical effects of these drugs by a course of experiments performed by myself, with the assistance of Mr. Fitz, of the City Hospital, during the last five months. To prevent wearying those who may read this account, I have selected a few experiments out of a large number, but always exposing those which are attended with peculiar physiological effects, only omitting those which are repetitions of others. The readiest and most effective method of administration, I found, after much difficulty, was that by gastric fistulæ. The traumatic injury did not apparently affect the action of the drug, nor did the physiological actions differ, in this method, from those in which the natural method of administration was employed.

I obtained, while in Paris last summer, a very pure sample of these two drugs, made by La Fontaine's Pharmacy according to the following process, of which I give the translation from the French:—

"Boil the tea leaves in water, which will dissolve the thein as well as malic acid and the acid malates. Strain *with expression*, and precipitate the malic acid, &c., by the acetate of lead. Filter and separate the lead by sulphuretted hydrogen. Concentrate this last filtrate over a water-bath after its decolorization by charcoal, and allow the crystals to form slowly, by natural evaporation. Or, treat a decoction of tea-leaves with a slight excess of acetate of lead. Filter and evaporate the liquid to dryness. This extract, distilled cautiously, will give the beautiful crystals of thein perfectly white."

With the thein thus obtained, I made the following experiments. The rectal temperature of a small guinea-pig was 38°.90 Centigrade.

At 4.30, I placed in the mouth of this animal a bolus of thein rubbed together in water, and kept it there until the animal had swallowed the broken-up fragments. This was repeated until about 1 gramme (15 grains) had been swallowed, and none rejected. I added water to assist in the deglutition.

4.45.—Sensibility preserved, and not exaggerated. Has had several evacuations of the contents of the intestines, of a hard and normal consistency.

4.51.—Several evacuations from rectum since last record.

5.00.—One fifth gramme was now given in the same manner.

5.10.—Holds himself erect by the forelegs, while the posterior extremities remain stretched out. Sensibility preserved.

5.45.—The forelegs are now extended, so that the animal lies on his belly. Cannot hold himself upright when placed in the proper position. When he moves, he crawls on the belly. Pulsations of heart increased in frequency. Respiration noisy, somewhat as in anæsthesia by ether; movements as if to vomit.

6.24.—Rectal temperature is 39.20 Centigrade. The animal vomits and dies, without convulsion or other premonitory symptoms, except slight trembling in maxillary muscles.

Autopsy (immediately after death). Sto-

mach filled with partially digested food and thein. A lump of thein is found in the pharynx, plugging the tracheal opening, being thus asphyxiated during the act of vomiting. Lungs collapsed; absence of crepitation under digital pressure. The left cavities of heart empty; the right partially filled with blood. In the lining membrane of the brain, vessels somewhat injected; also, some slight injection in vessels of the cerebellum.

After several unsuccessful attempts to induce rabbits to swallow thein in small doses, or mixed with Indian meal, I attempted fistulous openings of the stomach in some dogs and a cat, three of which recovered from the effects of the operation. I experimented first with the cat, by introducing 73 grains of thein, rubbed up with glycerine, into the canula.

Exp. 2.—Four minutes after—rigidity of muscles, frothing at the mouth, crying as if in distress, respiration hurried and distressed, discharge of fæces, running wildly round the room. Five minutes after—champing of jaws, increased respiration, tonic spasms, followed by a convulsion, the animal rising up slowly and falling suddenly backwards, with a forced discharge of urine; then lying quiet, with her muscles stiffly contracted, and legs shaking, occasionally champing her jaws, and frothing at the mouth. Twenty minutes after—death.

Autopsy (immediately after death). Reveals nothing abnormal, with this exception: the abdominal tissue in vicinity of the spleen was deeply injected; the canula was found imbedded and extending half way into this organ. About two thirds of the thein was found undissolved, lying in and around the canula.

From this experiment, it would be difficult to judge what disturbance may have been caused by the presence of the thein in the spleen, interfering with its functions, and what by the action of the drug itself upon the system. However, after a careful investigation with regard to the effects of an interference of the splenic functions upon the economy, I can find no reasons to attribute the serious disturbance above described to an interruption to the functions of this organ *merely*. (I would here state that the canula had been inserted three weeks before the administration of this drug.) I am, moreover, disposed to consider these various physiological phenomena as due to the drug, as can be seen from my next experiment.

Exp. 3.—A dog, upon whom I had successfully operated for gastric fistula six days before, was muzzled, bound, and placed upon the table; 90 grains of thein, mixed with one fourth of its weight of glycerine, as in the preceding experiment, was then introduced through the tin canula into the stomach in divided doses (the stomach was previously empty, and could be seen in its interior). The vermicular motion was now apparent, and the gastric juice soon began to flow. At a quarter to four, the animal was unbound and placed upon the floor of my laboratory, with the muzzle still on. He walked to his box in the corner, and lay down for a few moments; then arose and began tearing at his muzzle, champing with his jaws, respiring frequently and noisily. Soon he became violent, staggered out of his box through the open door and on to the hay, falling occasionally on to his head, tearing furiously at the muzzle and frothing at his mouth. At ten minutes before five, he fell over in a convulsion on to his back and side, frothing all the time, and champing his jaws. He now lay with his legs extended and stiff, then moving his legs as if walking rapidly. These spasms grew gradually less violent; only, however, to be succeeded by another at five o'clock, which was less violent, and terminated in the same manner as in the first. Other spasms occurred at varying intervals, the animal growing with each more feeble, until he succumbed at fifteen minutes past five. The heart continued its pulsations for three minutes longer. The forelegs were rigid; the posterior relaxed.

Autopsy (18 hours after death). Lungs normal, crepitating under pressure of the fingers. Heart—left ventricle, though almost empty, distended and firm; right ventricle flaccid, partially filled with coagula, half red and half white, the line of demarcation being quite distinct. Right auricle and superior vena cava filled with clots of dark blood. Stomach filled with a very frothy, grumous fluid, giving no purple color according to a test recommended by Beale,* viz., to "put a small quantity of a deposit of suspected urea, or of an urate, and then drop a drop or two of fuming nitric acid. Evaporate to dryness under gentle heat, then add a drop of ammonia or expose to ammoniacal fumes. A violet color (murexide) is seen, and indicates uric acid or an urate." He goes on to say that caffein gives this same test, and with the same result. I have often tried this with thein and caffein, both pure and mixed, or dissolved in some drug or acid. The mucous

* I translate his words from a French translation of his work, as I have not a copy in English at hand.

coat of the stomach was pale, except near insertion of the canula. The duodenum was also pale, filled in its upper portion with the same fluid as the stomach, but lower down with a yellowish fluid resembling chyle. The gall-bladder was full. The encephalon was then exposed. The sinuses were turgid with dark blood, but there was no extravasation. The cerebellum was slightly injected. The spinal axis from the cerebellum had no abnormal appearance or congestion.

The pathological phenomena point to no particular lesion in this case, except, perhaps, the slight congestion of the cerebellum. When there can be found no lesion of striking importance in the *post-mortem* appearance, after poisoning by some drug, the French call it death by intoxication. This might be thus classed.

Exp. 4.—The crop of a pigeon was opened, and some thein (20 grs.) inserted. In a short time there was discharge from the rectum, and every few minutes afterwards until its death. Locomotion was much impeded, and in an hour and a half convulsions occurred, and the bird was dead the next morning. I was called away at the end of an hour and three quarters, leaving the pigeon in a dying state. I made no *post-mortem* examination.

Exp. 5.—I made an incision through the abdominal walls into the stomach of a rabbit, placed in the stomach 20 grains of thein, and sewed up the wound.

10 minutes after—the animal walks with its legs stiff and back slightly arched. Respiration quite hurried.

17 minutes after—convulsions, preceded by twitchings of the facial muscles. The animal raises herself up, lifting her forefeet off the ground, and falling over backwards. Then she lies quiet on her right side.

20 minutes after—another convulsion, less violent than the preceding, and still lying on her side. No frothing at the mouth. Several times has discharged large quantity of fæces.

23 minutes after—another still less violent convulsion. Closes her eyes when an object is placed near them.

25 minutes after—convulsive movements, though now very feeble, still continue, the head always thrown back. Respiration very slow. Pulsation of heart scarcely to be distinguished. Twitching about mouth and orbital region the only signs of life.

30 minutes after—posterior limbs rigid, the anterior relaxed.

Autopsy (made 20 hours after death). All the viscera were in a normal state, with the exception of one white spot in the liver, resembling a small abscess (probably *not* an effect of the drug). No congestion anywhere, except in the region of the incision. Lungs contained some air. Stomach filled with food (as is always the case with the rabbit, even when starvation has been the cause of death); the mucous coat involving the undigested mass was detached from this organ, not an infrequent occurrence when the stomach has been undisturbed for a short time after death. A very slight injection of the lining membranes of the brain, especially in the vicinity of the cerebellum, but none in the brain substance.

Exp. 6.—Twenty grains of caffein was placed by the same process into the stomach of a rabbit.

10 minutes after—moves about restlessly, with legs stiffened and back slightly arched.

15 minutes after—champing her jaws, but does not froth at the mouth. No convulsions for an hour and a half, at which time I was obliged to leave her. Several profuse discharges from the bowels.

12 hours after—the animal was dead and stiff.

Exp. 7.—Ten grains of thein was wrapped in a piece of meat and given to a fasting dog. In three quarters of an hour she got up and paced the room, panting and holding out her tongue, respiration being much hurried. This continued, with intermissions of about a quarter of an hour, for two or three hours, and then ceased. The next day the animal was as well as usual. This, then, was not a poisonous dose.

Exp. 8.—At 3.10, I gave 30 grains of caffein, wrapped in a piece of meat, to a terrier dog.

3.45.—Pants, with tongue extended, walking restlessly; hind legs stiff.

3.53.—Drinks large quantities of water.

3.58.—More uneasy, jumps into a coal-box, rolling round and rubbing his nose and ears in the coal.

4.10.—Respiration much hurried. Is forced out of the box, and then drinks another large quantity of water; he soon vomits up the meat and a large amount of liquid, which leaves, on cooling, a white residue resembling caffein.

At 5.20 was obliged to leave him, still uneasy and restless, and the next morning early found him dead and stiff.

Exp. 9.—To a spaniel of twice the weight of preceding dog, I administered 40 grains of caffein at the same hour and in the same manner as the preceding. He was not as restless as the other dog, but I left them both panting hard. This last dog neither drank

water nor vomited. He was also dead the next morning. Neither had a discharge from the bowels.

Exp. 10.—Mr. Fitz opened the crop of a pigeon, and introduced 20 grains of thein.

In ten minutes—several discharges from the bowels occurred.

In half an hour—cannot balance herself.

In thirty-five minutes—cannot walk, but lies flat on table and flapping her wings. Has apparently lost the power of moving her legs. Respiration accelerated.

In forty minutes—dead. Legs rigid, wings relaxed.

Having proceeded thus far in the course of my experiments, I accidentally came across an article, published in the *Archives de Physiologie*, under the direction of Prof. Brown-Séquard and other distinguished physiologists, concerning *Caffein*, wherein the author affirms that this drug exhausts muscular contractility. My own impression is, that death ensues from an exhaustion of the muscular power, that of the heart occurring last.

Exp. 11.—I therefore placed some thein on an exposed muscle of the leg in a rabbit, and moistened with a drop of acetic acid to dissolve the thein. After an interval of ten minutes, I applied the poles of a bichromate-of-potash battery, and obtained little or no response compared with that before the experiment. I then isolated a nerve on glass rods, placed thereon some thein, and applied the two poles above and below the drug to the nerve, and the muscle did not contract.

Exp. 12.—I was then induced to try the following experiment (the importance of the object justifying the apparent cruelty of the operation). I severed the spinal cord between two lumbar vertebræ in a rabbit of three months' age, producing complete paralysis of the posterior train; reflex action was still intact. I then introduced into the stomach, by an artificial opening, 30 grains of thein, and closed the wound. In half an hour, muscular quiverings commenced in the upper and anterior part of the body, and *none* in the lower portion. These quiverings increased in strength till feeble spams occurred in upper portion of the body, especially in the facial muscles, and life was soon suspended. I now applied from an induction coil of sufficient power (giving a spark one quarter of an inch long) the two poles to an anterior limb, the muscles being exposed, which returned a *very* feeble response. I then applied them to the posterior extremities in the same manner, and the muscles contracted forcibly, extending and retracting both limbs. These results were manifested for several minutes. It is worth mentioning that I had tried the muscular contractility of both regions before the administration of the drug, with no difference in the power of contraction.

I repeated this last experiment upon two full-grown rabbits, with the same results; and the last time the animal lost much blood during the operation, an artery being pricked and the flow of blood with difficulty being staunched. The convulsive quiverings commenced in half an hour after the introduction of the drug, and were very feeble, occurring at intervals of ten minutes. The heart beat only for a few seconds after apparent cessation of life.

These animals lived six times as long after the exhibition of the drug as in my other experiments, and perhaps because the muscular spasms were more feeble, and not so soon exhausting their power of contraction.

This experiment points to two important effects of this drug:—

1. That this drug poisons by exhausting the muscular contractility throughout the body, and affecting last of all the muscles of the heart.

2. That the spinal cord is that part of the nervous system principally affected, as shown by the convulsions in all the experiments, and, most conclusively, in these last experiments where the posterior train was not convulsed.

To these I might add another effect: that the involuntary as well as the voluntary muscles were stimulated and exhausted till their death or loss of power, as shown by the continued discharges from the bowels and bladder, as well as the quickening and, secondarily, impairment of circulation and respiration.

With regard to its use as a therapeutic agent, there is much to say. It can be used where we wish to stimulate muscular and nervous action. So powerful an agent must also be used cautiously, and the abuse of coffee and tea should be guarded against. I should hope, from its peculiar action, that it may be useful in opium poisoning, and it is known that coffee after a dose of opium is very refreshing. But it must be remembered that though the primary action is excitant, the secondary action is depressant. It should also be borne in mind that coffee little roasted is soothing, and when overroasted exciting to the nervous system. The dose of caffein, as used by Prof. Oppolzer in cases of nervous headache and hemi-

crania, is one grain combined with an equal weight of quinine, as Dr. F. B. Greenough lately informed me.

April 10, 1868.

THE REGISTRATION OF DEATHS.

By George Derby, M.D.

I wish to say a few words on this subject in reply to Dr. Buckingham's article in your last number. Dr. Buckingham regards all death returns under the registration law as without value because certain returns are known to him to be incorrect in a greater or less degree. These inaccuracies are of two kinds: 1st, errors of diognosis; 2d, statements of fact relating to age, duration of disease, &c., which could not have been within the certain cognizance of the physician signing the certificate of death.

I think Dr. Buckingham does not see the spirit, although he does the strict letter, of the registration laws. Their object seems to me to be to get at the most essential facts relating to deaths in the simplest possible way, and in putting the responsibility of signing certificates upon medical attendants it is placed where, upon the whole, it is most probable that correct information can be obtained. If the relatives or undertakers were relied upon they would be compelled to apply to the physicians, who would have just reason to complain that they were not directly asked by the proper authorities. That all medical attendants upon the dying are not well educated persons is much to be regretted, but well educated physicians are sometimes unable to make a positive diagnosis during life, or even to state with absolute precision the cause of death with the body exposed to post-mortem examination. These are facts which we must accept as evidence of the difficulties of our art, and of the complex organism with which it deals; but to reject on this account all death returns as valueless would be to take away one of our most important aids to a knowledge of disease. A patient with doubtful signs of phthisis comes to us for advice. The question is at once asked concerning the deaths of blood relations. If the reply is that they have died from consumption, we feel a probability amounting to conviction that we have to deal with the same disease. Registration gives us from the community at large, and with the probability of error diminished by the magnitude of the returns, just this kind of information, which we are no more justified in rejecting in the one case than the other. The weekly returns of the City Registrar are indications of the prevalence of epidemics, pointing steadily at the essential facts, practically noted by us all, and as much to be relied on as the thermometer or the wind vane. I cannot think that any physician would be willing to give them up because of errors of diagnosis which medical attendants may have made.

Were registration returns not essentially correct, how can we account for the nearly persistent percentage of deaths from phthisis extending through a quarter of a century, and the constant slight excess of deaths from this cause in the seaboard counties in every year, or the gradual increase of diphtheria through a series of years and then its equally gradual decline, or the small mortality from zymotic diseases in all parts of Massachusetts in certain years? The operation of general laws like those to which we have referred is abundantly evident on examination of our death returns for a series of years, and these laws could not be demonstrated in any other way. The ignorance of a certain number of persons who sign death certificates cannot obscure the working of these laws, which it is certainly of the greatest importance to our profession to become familiar with. It is to be remembered also that in the collation of death returns it is possible to extinguish inevitable errors and to retain important truths by classing together kindred diseases, and placing in contrast affections of different regions or systems little liable to be confounded by the most unenlightened.

To reject all information concerning disease except what is capable of rigid demonstration is what no one can do in the individual case, and why is it more expedient when dealing with large numbers, derived from the observation of many persons having no common interest to suppress the truth as they saw and believed it?

With regard to the question of age, duration of disease, parentage, &c., although for the sake of simplicity of form they are all embraced in the same certificate signed by the physician, they are practically filled up by the relations or friends, and I think no physician need hesitate to affix his name through fear of being held accountable for errors on these points. Who knows of his own knowledge when he himself was born, and who for the want of this personal knowledge would be unwilling to swear to the date? Archbishop Whateley's argument concerning the existence of Napoleon Bonaparte will show what I mean. We must take the evidence of others as perfectly con-

clusive in circumstances of daily occurrence, and this death certificate is one of them, in which if a physician certifies to the best of his belief he will, if in error, be acquitted of wrong doing by the common sense of his fellows. Finally, I hope that physicians will continue to make as clear and correct death certificates as they can, knowing that all human institutions of government, registration laws included, are imperfect, but, on the whole, very useful.

Hospital Reports.

BOSTON CITY HOSPITAL.

Ophthalmic Department. Service of Dr. WILLIAMS.

CASE I.—*Double Cataract, coincident with Diabetes.*—April 20. A. S., aged 18. For the last three years has passed an unusually large amount of urine. It is of a clear, straw color, much lighter than normal; a large amount of sugar was found by Trommer's test. His general appearance is feeble and emaciated. The cataracts presented a uniform grayish color, peculiar to those existing with diabetes. The pupils were widely dilated. No operation was advised for the present, because of the patient's condition.

CASE II.—*Nearly total Blindness and partial Paralysis from Cerebral Disease.*—W. A., aged 12. Five years ago, his sight began to fail him, the symptoms being first noticed by his school-teacher. He has very indistinct vision from the upper and outer part of left eye. There is partial paralysis of the third and sixth pairs; also of the facial of right side. The tongue showed no very marked deviation from a straight line, although it might have inclined slightly to the left. His speech was very imperfect, being stuttering and thick in character. When he whistled, his lips were but slightly contracted, it being mostly accomplished by the tongue. The grip of the left hand was stronger than that of the right. By examination with the ophthalmoscope, it was difficult to distinguish the outline of the discs. Pigment-matter was found scattered irregularly over the surface of the retina, and the vessels were small.

CASE III.—*Separation of Retina produced by Myopia.*—J., aged 50. Has been near-sighted for thirty years, which he attributes to an attack of measles, but which was probably the result of continuous professional study. With left eye, he now sees No. xxx. at 12 feet with concave glasses; but with right eye sees only objects placed above the horizontal meridian. This loss of vision supervened suddenly, flashes of light having been observed in this eye, followed by an appearance as of a drop of water in the field of vision, which appearance became gradually a haziness, increasing and extending day by day.

Examination with the ophthalmoscope showed a separation of two thirds of the retina, which floated up and down in irregular folds with every movement of the eye. The other eye shows only a moderate amount of posterior staphyloma, and it is probable that if he had not been for years in the habit of using the eyes in study, with the head bent forward, the unfortunate result in the right eye would never have occurred.

CASE IV.—*Traumatic Cataract, with Atrophy.*—T. L., aged 7 years. Parents and patient deny all knowledge of his ever having received injury. Four years since, a friend first noticed a difference in the appearance of his eyes, when sight was tested and found wanting in the left eye. Soon after, noticed "something growing on the inside of the eye." Has never had *pain* or *redness*. Left eye somewhat atrophied, free from pain or injection; cornea clear; iris not changed in color, but adherent in part to opaque capsule; pupil filled, except at the inner border, where there is a small, narrow opening from above downwards, with kidney-shaped, chalky-white capsule. On examination with *oblique illumination*, a small cicatrix on the inner edge of cornea was visible, and of the lenticular substance none remained, showing the eye to have been penetrated at some former time, the capsule of the lens ruptured and the lenticular substance absorbed, leaving the opaque capsule stretched across the pupil. When a flood of light was thrown into the eye, the patient was entirely unable to distinguish it. Has never had any symptoms of sympathetic inflammation. Dr. Williams remarked that the case was interesting as showing the absence of any inflammatory process, the similarity in some respects to congenital cataract, and the absence of all knowledge of injury having been received. Parents were recommended to have nothing done unless trouble appeared in the right eye.

CASE V.—*Traumatic Separation and Rupture of the Retina.*—H. H., aged 40 years. Health always good. No myopia. Twenty-five years ago, received a blow from "snare" across left eye, followed by deep-seated pain and injection of the super-

ficial tunics of the eye, which lasted for two weeks. Two years later, sight began to fail in left eye, but as right eye was good cannot say how much vision was impaired at that time. Six years ago, he lost the right eye from traumatic injury, followed by atrophy of the globe. After recovering, he first discovered how much vision was impaired in left eye, with which he found he could only distinguish day from night. No change in vision since. Since the primary accident, has been free from pain. In the left eye—cornea and lens healthy; iris looks well and acts under light; media normal; no appearance of separation of the retina when examined by ordinary daylight.

With ophthalmoscope, the following appearances are presented:—A large part of fundus shows separation of retina, presenting its ordinary aspect, with vessels ramifying over its surface; but in the centre of the separated portion the retina has evidently been torn, allowing the escape of the effused fluid, and causing a folded appearance of the edges of the laceration. No treatment could be of any avail.

BOSTON LUNATIC HOSPITAL.

C. A. Walker, M.D., Superintendent.—Reported by T. W. Fisher, M.D.

Case I.—*Suicidal Melancholy.*—Mrs. W., 40 years. Insane six or eight years ago. Last child born four months ago. Was overworked during pregnancy, and exhausted since confinement by loss of sleep, during an attack of cholera infantum, of which the child died. Four weeks before its death, it was found half strangled in its mother's lap, with marks of violence about the fauces, as from a finger-nail. She was suspected of, but not charged with an attempt on the child's life. Insanity, strange to say, was not thought of till after its death, when she became depressed, with poor appetite and loss of sleep. Sept. 13th, attempted suicide by ether, paregoric and strangulation. Sent at once to hospital.

Sept. 14th.—Wants to die and be with her child. Thinks she ought to have come sooner. Sept. 15.—Slept well with simple anodyne draught. Worries about home in the morning. Cheerful and joking in evening. Sept. 16.—At noon, after operation of a Seidlitz powder, felt something "give way" in her head, where previously had been a *heavy* feeling. Head feels natural again. Sept. 19th.—Not as well. Admits attempt to strangle child, but denies poisoning it afterwards, of which she had been suspected. Sept. 25th.—Visited Boston Athenæum. Rather indifferent. Sept. 26th.—Has an explanation with husband, by which she is much relieved.

The treatment adopted at this time was: Tinct. fer. chlo. gtt. xxx. ter in die, with frequent cathartics and enemata. For its effects as a cerebral tonic, morphia one fourth gr. ter in die, with addition of fl. ext. valer. ʒij., and fl. ext. hyosc. ʒss. at bed time.

Oct. 18th.—Goes to ride often and to the theatre. Improves in spirits. Dec. 1st.—Improving decidedly. Cheerful. Eats and sleeps well. Industrious.

Dec. 30th.—Discharged reluctantly, but seemed quite well.

Jan. 29th.—Has visited hospital twice since discharge, seeming well and cheerful. General health good. To-day, learn of her suicide by hanging. Was left alone in the house, having been depressed a day or two previously.

Case II.—*Suicidal Melancholy.*—Miss E., 34 years. Had a brain fever at age of nineteen years. Has had much domestic trouble. Family very consumptive. Sent to hospital after attempt at suicide. July 8th.—Cries and refuses food. Is habitually costive and has a slight cough. Pulse feeble. Tongue dryish. Sleeps little and dreams much. Constant dull pain in head. July 12.—Requires constant watching from repeated attempts at suicide. Menses present. Treatment same as in Case I., but requiring morphia in half gr. doses. Aug. 23d.—Improves a little, but is very wilful. Swears, to show she is not afraid to. Wants to go to hell, for the same reason. Sits in window to catch her "death cold." Throws things violently across room to relieve her surcharged feelings. Aug. 30th.—Confesses that she had strong temptations at one time to kill her sister's child. Is afraid of her own impulses, but can control them better than formerly. Often has a sensation in back of head as if hot liquid was being poured on.

Oct. 30th.—Sleeps better. Improves, but unfortunately, it becomes necessary to remove her to another hospital. Goes reluctantly, but resigned to the necessity.

Jan. 5th.—Hear her recovery has been retarded by the change.

April 2d.—Was discharged, and after being informed of it, but before leaving the hospital, made another attempt on her life! Was finally discharged well the following January, and has remained so.

Case III.—*Suicidal Melancholy.*—Miss O.,

24 years. Family eccentric. Father subject to depression, and mother died of some disease of the brain. Patient is very scrofulous, and has been an invalid from disease of the bones. Has of late had a disappointment, followed by depression and strange sensations in the head. Menses ceased recently. Had made several purchases of laudanum and chloroform. Habitually costive, sleeps little, cries much and eats irregularly. Complexion bad. Says her feelings are unbearable and incurable, but is willing to try hospital treatment.

Jan. 20th.—Has spells of extreme depression, during which she cries for hours incessantly, then suddenly brightening up again. In intervals, is cheerful; laughs, sings, plays the piano, and works. Is negligent in dress. Treatment as in Case I.

March 1st.—Has been at times very wilful; mind and complexion clearing up slowly. March 18th.—Says her suicidal thoughts are gone. April 30th.—Rides and walks out often; improves and is anxious to recover. May 8th.—Eloped, and bought laudanum, but did not use it. Returned to hospital May 10th.

June 25th.—Menses appeared scantily.

July 1st.—Removed prematurely by friends before recovery was confirmed; but menses appeared again the day after, and she has given proofs in frequent visits, for several years, of a perfect recovery.

These three cases are all forms of affective insanity without delusion. Each inherited a susceptible cerebral organization, clearly based in two cases on the tubercular diathesis. The 1st and 3d had been subject to debilitating causes, and all to severe moral shocks. Abnormal sensation in the head, *not* ordinary headache, was an early symptom in each.

The moral treatment consisted in removal from painful associations, varied occupation, kindness, encouragement, *straightforwardness*. The 1st would have recovered thoroughly by longer treatment; the 2d, sooner had it not been for her change of hospital, which retarded her recovery. In the 3d, there was a diversion of the morbid impulse towards hysteria, which, perhaps, saved her from suicide.

THE *France Médicale* says that a banker in Saxony has opened a branch in which medical men are invited to send accounts against their patients. The banker takes charge of the bills, and is content with five per cent. discount. Such an establishment would doubtless be welcomed by medical men in this country.

Bibliographical Notices.

Neuroses of the Skin. By HOWARD F. DAMON, A.M., M.D., Member of the Boston Society for Medical Improvement, Admitting Physician to the Boston City Hospital, and Physician to the Department for the Treatment of Skin Diseases among Out-patients, Author of Photographs of Skin Diseases, &c.

THIS is a book of 114 pages. It opens with a graceful dedication to Prof. Brown-Séquard. The design of the author in preparing the volume seems to have been to elucidate the hitherto unexplained phenomena of cutaneous pathology, and to suggest the most appropriate treatment—all which he has done, and done well.

He classifies the various cutaneous affections into Neuroses of the Skin; Functional Diseases of the Cutaneous Glands; Inflammations of the Skin; Structural Lesions of the Skin. This classification is based upon anatomical, physiological and pathological data.

The monograph before us treats only of the first of the foregoing classes, and appears to comprehend all that is known with regard to it, and thus it makes a complete, independent and reliable treatise of great value to the medical student and to the practitioner. The work bears ample evidence of careful investigation and study. The style is easy and free from ostentation and superfluities, and the author is entitled to the thanks of the profession for the clear and satisfactory manner in which he has presented the important subject of his monograph.

The mechanical execution of the book is unsurpassed by anything of the kind in this country. **

NUX VOMICA IN CHRONIC DYSENTERY.—In a recent number of the *Bullettin Gen. de Therapeutique*, is an article by Dr. De Savignac, upon the use of nux vomica in dysentery and dysenteric paralysis. His theory is, that the cause of the disease lies in an affection of the spinal cord, which causes paralysis of the motor nerves of the large intestines, and of the vaso-motor nerves which supply its bloodvessels. If this be correct, nux vomica would appear to meet the indication precisely. Dr. Savignac, who has had large opportunities for observation in the marine hospitals of Toulon, claims excellent results.—*N. Y. Med. Gazette.*

Medical and Surgical Journal.

Boston: Thursday, May 28, 1868.

SANITARY MEMOIRS OF THE WAR.

The noble volume* which we have before us is the first of a series, and will require several notices at our hands. It is edited by Dr. Austin Flint, whose duties have been confined to the selection and collation of materials. It is entitled, "Contributions relating to the Causation and Prevention of Disease, and to Camp Diseases; together with a Report on the Diseases among the Prisoners at Andersonville, Ga."

The first section treats of General Pathology; the second of Special Pathology; the third relates to the prisons.

Although the bulk of the work is made up of contributions from Surgeons of the United States Armies, yet the other side is not excluded, since we have no less than six Confederate contributors. Conspicuous among these are Dr. Joseph Jones, Professor of Physiology and Pathology in the University of Nashville, and Prof. Paul F. Eve.

The adaptability of various races to the vicissitudes of war are treated of first by Dr. Roberts Bartholow. He says, in substance:—

The *races* composing our armies consisted chiefly of American, Celtic, Teutonic, Negro, and the mixed Spanish-American nationalities. The term American applies to the composite race now inhabiting this continent. As regards aptitude for military service and power of endurance, they stand in the relation in which they are placed above; the American first.

The mental characteristics that fit the American for military service consist of a spirit of enterprise and an intellectual hardihood which render him superior to fatigue, an easy bearing under defeat, and a buoyant self-confidence which misfortunes do not easily depress. The national vanity and love of popularity may have much to do with these qualities. . . . . His physical qualities consist not so much in muscular development and height as in toughness of fibre and freedom from fat, whereby active and prolonged movements are much facilitated. In active service, he fails more frequently from defects in his digestive apparatus and from a phthisical tendency, than from a lack of power due to imperfect physical development. . . . . The Celtic race, in respect to mere physical development, is not unequal to the American; but they have less tenacity of purpose and mental hardihood. The Teutonic element has several defects of structure, common to a greater or less extent to all Germans, which impair their power of endurance—such as a predominance of the lymphatic temperament, a patulence or unusual weakness of the abdominal rings, flatness of the feet, and a tendency to varicose veins. . . . The Negro possesses many of the physical qualities pertaining to the highest type of the soldier—sufficient height, ample thorax, and considerable power of endurance. His chief defects are small, ill-developed calves and bad feet, and a proneness to disease of the lungs. The Mulatto is invariably scrofulous. The mixed races of New Mexico are inferior to the Negro.

Our troops suffered severely from camp measles—no less than 38,000 cases and 1864 deaths being reported during the first two years of the war; and there is reason to believe that the actual number of cases was considerably greater. Dr. Bartholow cannot subscribe to Dr. Salisbury's views of the vegetable or fungous origin of the disease. The latter gentleman ascribes it to a variety of *penicillium* infesting wheat-straw. These views were accepted by Dr. Hammond, but wholly denied by Dr. Woodward. Dr. Bartholow reports as follows:—

"With a view of ascertaining how far such a cause could have had an agency in the production of measles, special inquiry was made on this point in one hundred cases, with the following result: eighty-five had not, and only fifteen had, slept or lain on hay or straw since enlistment. . . . . The new and unnatural experiences to which recruits were subjected, induced a condition of the organism exceedingly favorable to the reception and development of a morbific agent. The epidemics of measles occurred in the fall, winter and

* Sanitary Memoirs of the War of the Rebellion. Published by the U. S. Sanitary Commission. New York: Hurd & Houghton. 1867.

spring. The camps were damp, the air poisoned, the diet insufficient. Catarrhal affections occurred in the proportion of 512 per 1000, or more than half the strength of the army. There was, accordingly, a serious disturbance in the vicarious relation between the skin and kidneys, and the skin and mucous surfaces, intestinal and bronchial. An amount of the specific poison of measles, under ordinary circumstances insufficient to develop an epidemic, would, in these circumstances, grow into a formidable one. We have here a ready explanation of the origin and propagation of camp measles, without resorting to the agency of straw fungi, whose effect, if they have any, must be limited to the production of 'hay-catarrh,' or 'hay-asthma.'"

From a chapter on Faulty Alimentation, by Sanford B. Hunt, M.D., we draw the startling statement that but six men out of one thousand in our armies, escaped without some form of diarrhœa. This he ascribes mainly to an injudicious or defective diet.

"One of the most fruitful causes of disease," he says, "is to be found in the ration and its unscientific employment. We reach this conclusion from the uniform observation of army surgeons—that veteranship conferred no immunity from diseases of assimilation; that chronic diarrhœa and scurvy increased with the term of service; that the longer a soldier had been subjected to the ration (as he got it), the more liable was he to develop some form of cachexia when wounded."

As a mode of estimating the amount of food required by the adult soldier, we have the average weight of one hundred soldiers compared with French and English troops.

"The average French weight was 5½ pounds less than the American, and the average English weight was about 18 pounds less than the American. This is an emphatic contradiction of the prevalent idea that the physical manhood of the Americans has deteriorated from the European standard."

"Physiological experiment has arrived at a close approximation to the average diurnal gain and loss in the man of one hundred and forty pounds weight. The daily gain is stated as follows:—

Water - - - -	lbs. 4.109	Inorganic gain	lbs. 6.301
Oxygen - - - -	" 2.192		
Dry vegetable food	" 1.687	Organic gain -	" 2.250
" animal "	" .563		
Total daily gain - - - -			lbs. 8.551

"The total daily loss, in a healthy body, will be exactly equal to the gain." . . .

"In the above table we may at once dispense with three fourths of the weight of the *ingesta* named, as not in any army ration. Water and oxygen are provided by another Commissary; but it should not be forgotten that they are nevertheless foods, and that the official act or neglect that deprives the soldier of any part of his six and three tenths pounds of water and oxygen, robs him of so much actual food to which he is entitled."

"The food elements containing carbon and hydrogen stand to those containing nitrogen in a proportion variously stated, at from one part of nitrogenous to three, five, or even seven parts of non-nitrogenous. Beneké, from a study of the diet-scales of the principal schools, prisons and hospitals of London, 'derives the conclusion that nitrogenized should be to non-nitrogenized food as one is to five.' Frerichs puts his estimate in ounces: nitrogenous 2.17 oz. to non-nitrogenous food 15.54 oz.; or, as one is to seven. Prof. Christison, the distinguished Edinburgh savant, says, in his 'Observations on a Report by Sir John McNeill, relative to the Diet of Soldiers':—

"'Soldiers in the field will be the more efficient the nearer they are brought to the athletic constitution. But as the demand for protracted, unusual exertion occurs only at intervals, the highly nutritive athletic diet is not absolutely necessary. On the whole, from experience in the case of other bodies of men somewhat similarly circumstanced, twenty-eight ounces of real nutriment, of which seven are nitrogenous or reparative, will probably prove the most suitable. Any material reduction below twenty-eight ounces will certainly not answer; and under unusual exertion, kept up for days continuously, as in forced marches or forced siege labor, the quantity should for the time be greater, if possible."

"The quantity of carbonaceous food varies from twenty-seven ounces in the Turkish ration to twenty-one ounces in the United States ration, and so on a gradually decreasing scale to the nine ounces, stated by British authorities to be barely sufficient to avert starvation diseases. The proportions are noticeably the same as those stated in the discussion of nitrogenous food, and it is interesting to find that experiences so widely separated reach at last results so nearly identical. The quantity of absolute carbon in the American and British rations is about thirteen and a half ounces

in each. This quantity is found in the entire ration, as even the muscular meats, which we speak of as "nitrogenous," contain 53 per cent. of carbon."

As to the need of vegetables,

"The importance of this form of food is universally conceded, if not scientifically understood. We recognize in our natural craving for the succulent vegetables a proof of their necessity, and when deprived of them, we find that the blood undergoes changes producing diseases of assimilation. Yet it is plain that the great value of fresh vegetables does not lie in their carbon or nitrogen. They contain nearly 90 per cent. of water, and are therefore bulky and expensive in transportation, and altogether unavailable as food in the sense which we have employed in the previous treatment of this subject. What then is their value?

"Starvation is a comparative phrase. We can starve muscle by withholding nitrogen. We can starve the fats of the body and destroy the animal heat by withholding carbon. So, too, we can starve the brain by withholding phosphorus, and starve the blood by failing to supply it with those salts of lime, potash, soda, iron, and magnesia, which are essential to its healthy condition.

"The source of these salts is twofold. They are found, first, in the water we drink, which is almost always impregnated with mineral substances; and, second, in what may be considered as their natural source, the fruits and succulent vegetables. To these sources there is another to be added in the case of common salt, which is craved in excess of the natural supply by both the human animal and the brute. But the only reliable source of our phosphorus and potash is in the vegetable foods.

"It is possible that the dietetic value of fresh vegetables rests largely upon this fact—as if the luscious fruits were Nature's sugar-plum to tempt the grown-up boy of humanity to take his daily dose of salts."

After considering our army rations at length, Dr Hunt sums up his conclusions, as follows:

"It will be seen from the preceding pages that the U. S. army ration is badly distributed. Its errors may be briefly summed up as follows:—

"1. In making fat pork or bacon a substitute for fresh beef, and thereby reducing the nitrogen of the ration below starvation point.

"2. In making salt beef a substitute for fresh beef. It is not an equivalent.

"3. In making compressed vegetables a substitute for eight times their weight of starches.

"4. In an excessive quantity of carbonaceous foods and a deficiency of the saline elements.

"5. While the variety of carbonaceous foods may not be too great they are unduly cumulated. A system of rotation should be substituted.

"A ration made up of twenty ounces beef, four ounces pork, sixteen ounces flour, one half pound potatoes, and two and a half ounces of beans, with eight ounces of fresh vegetables, would contain 15.169 ounces of actual carbon, about 390 grains of nitrogen, and 11.55 ounces of component salts, exclusive of common salt and coffee. It would thus supply *all* the wants of the system, instead of irregularly supplying sometimes one and sometimes another element, with no regard to which was most needed."

Space fails us to pursue these most interesting inquiries further; we hope to return to them, in a future number.

TO OUR CONTRIBUTORS.

We regret that many of our contributors are kept waiting so long for the insertion of their papers. The delay, however, is unavoidable.

In a recent number of a London medical journal, the fact that an offer of a copy of our Journal had been made to accepted contributors, a few months ago, was commented on in contrast to the overflowing field in London, as an indication of a failing condition, in this latitude, of medical journalism. Such is certainly not the case now. Since the Boston Medical and Surgical Journal was enlarged, we have been crowded with material—original, from the hospitals, from medical societies, criticisms and translations. The only difficulty has been to select, and to postpone.

While we are delighted to receive communications from these sources, our editorial task is thereby rendered more perplexing.

So far as possible, we insert articles in the exact order in which they are received. A combination of circumstances sometimes compels us to vary. But we do so as little as we can.

We give all who favor us a prompt answer, affirmative or negative. The first

class we entreat to patience. As to the second class, we are sometimes obliged to decline articles of merit, because they are too long or otherwise unsuitable for a weekly journal. The manuscripts are preserved in the JOURNAL office, if their authors desire them.

We shall feel ourselves obliged hereafter to devote but a limited space to the proceedings of county and other local medical societies, especially in the insertion of names of officers and the details of mere business matters. Abstracts of papers read before such societies, reports of cases, or discussions on medical subjects, we shall be glad to make use of as far as space will allow.

THE *Annual Meeting of our State Medical Society* will take place next week.

On Tuesday (June 2d), there will be an exhibition of the two Hospitals at 10, A.M. At 12, M., papers will be read, as already announced, and this will be resumed at 4 o'clock in the afternoon.

On Wednesday, at 10, A.M., the annual meeting will be held; and at 2.30, P.M., the annual dinner in the Music Hall will close the day.

We call the attention of our readers to this meeting in order to invite them all, so far as they can, to come and witness its public exercises. We believe that all our professional brethren who can leave their duties will enjoy and profit by what is to be seen and heard here. Particularly do we hope there will be a full attendance on the first day. This is the most interesting day, in a scientific point of view.

The Massachusetts General Hospital will offer all its usual and valuable attractions.

We may be allowed to say a word for our own hospital, as not unworthy the inspection of our visitors. The Boston City Hospital having been in operation only four years, is as yet unknown to many of the physicians out of the city. Its peculiarities of architecture, its rapid growth, and the number and interest of its cases, merit attention. A new, and, it is believed, most complete building for out-patients is just opened for use.

Ample time and opportunity will be afforded those who may choose to visit us at 10, A.M., on Tuesday, to examine the buildings and the patients. At 11, A.M., there will be a variety of important operations, both surgical and ophthalmic, which will occupy the rest of the morning.

The number of our out-of-town visitors on these anniversaries has yearly been increasing, and we hope, next week, to have the pleasure of seeing here a still larger number of the members of the Massachusetts Medical Society.

"Une Rectification, une Réclamation, ou autre chose," addressed to the *"Gazette Hebdomadaire de Médecine et de Chirurgie."*

MR. EDITOR,—In the number of this JOURNAL for December 19, 1867, while its editorial pages were under our charge, was a "reclamation" addressed to the eminent French journal named above. The *Gazette Hebdomadaire* had reported M. Giraldès as stating that the "Medical Society of Boston" had acknowledged four hundred (400) cases of death from the inhalation of ether; and in the issue of February 28, 1868, very kindly gives a literal translation of our note contradicting this statement. We beg leave to say that we made that note "laconic" in order to secure its ready admission into the valuable columns of your trans-Atlantic cotemporary, and into such other periodicals as might have copied the mistakes we were endeavoring to correct.

"The number 400," says the *Gazette*, "indicated at the session of the *Société de la Chirurgie* of November 6th (No. 47 *Gaz. Heb.*), was an error, that we rectified au *premier—Paris* No. 48, and in No. 50, p. 793." Forty-one (41) is now, therefore, correctly given as the figure representing the total of the alleged cases of death by the inhalation of sulphuric ether *investigated* by the Boston Society for Medical Improvement.

Another point, however, at least equally important, is not so clearly brought out. It is this. The Committee of the Boston Society for Medical Improvement report that in *none* of the cases investigated by them was death fairly attributable to etherization. Yet, on this head, M. Giraldès, in the *Gazette Hebdomadaire* for March 6th, 1868, for his sole reply (*pour tout réponse*) to what he styles *une rectification, une reclamation, ou autre chose*, refers us to page 20 of the report for the "table of the cases in question." Well! Page 20 of the report is before us at this moment of writing; and

thereon in no instance is etherization set down as the "probable cause of death."

The statement attributed to M. Giraldès at a session of the Imperial Society of Surgery, that the Boston Committee had reported cases of fatality from the inhalation of sulphuric ether, is evidently quite different from the paragraph quoted by the *Gazette* from his Dictionary, in which certain inferences of his own are vaguely intimated that the ether and the fatality stood in the relation of cause and effect. Most certainly, M. Giraldès has a perfect right to form his opinion from the records of these cases, as cited in the appendix to the Report of the Medical Improvement Society, as to whether or not our Committee were correct in their deductions. But, on that question we have now no discussion with him. We have simply to insist that in any and all of the cases—investigated by the Committee—of death alleged to be produced by inhalation of sulphuric ether, *they* declared that the allegation was not sustained by the facts. There is, then, absolutely nothing to impugn, weaken, or qualify our original assertion, which we here repeat, that *no Medical Society in Boston has acknowledged the record of a single instance of death from anæsthesia produced by sulphuric ether*. We will add, in order to preclude all possible question as to our meaning, that no one of our medical societies here has ever had any veritable case of the kind *brought to its notice*.

We most respectfully solicit the editors of the *Gazette Hebdomadaire* to set their readers right in this matter, as they have already so promptly done with reference to the numerical error. We have no doubt M. Giraldès will be able to explain the misunderstanding which exists on his part, or on that of his reporters. P.

Obituary.—(*Comm. for the Journal.*)—Died in Wareham, May 3, 1868, Francis Minor Lincoln, M.D. Dr. Lincoln was born in Boston, January 29, 1830. He was son of Minor S. Lincoln, a well-known Boston merchant. After graduating at the Norwich Military Academy in 1850, and at Trinity College in 1852, he immediately began the study of medicine in the Tremont Street Medical School, in Boston, at the same time receiving private instruction from Prof. Henry J. Bigelow.

He received the degree of Doctor of Medicine from Harvard University in 1854, and immediately went to Paris, where he remained until the spring of 1855, returning via New Orleans as surgeon of a packet-ship with emigrants. In the fall of 1856 he again made a voyage to Liverpool as surgeon of the ship Underwriter, thence to Paris, where he remained until the summer of 1857, when he returned in the same ship. In April, 1858, he made another voyage to Liverpool in the Underwriter, returning in August of the same year. His time between these voyages and the period when he entered the service of the United States was passed in the practice of his profession in Boston and New York. September 12, 1861, he was commissioned Assistant Surgeon of the 9th Reg't Mass. Vols., and July 28th, 1862, was commissioned Surgeon of the 35th Regiment, serving in that capacity until his discharge for disability, March 10th, 1863. After regaining his health, he again entered the service as Acting Ass't Surgeon, and continued to discharge the duties of that position for over two years, when he returned home with health much impaired, having contracted pulmonary consumption. The last two years of his life were passed at his father's residence in Wareham, Mass., patiently awaiting the result of his disease.

Dr. Lincoln was thoroughly prepared for the practice of his profession, and as a practitioner was prompt and skilful. Endeared to a large circle of friends by the strongest bonds of affection and the sweetest amenities of life, he was possessed of those marked social qualities, which by reason of his retiring manners and reserved habits escaped the notice of the many, but which were so prominent to those who knew him best; and in the hearts and the homes of his large circle of acquaintances will the name and the many virtues of Dr. Francis M. Lincoln ever be held in fond remembrance and respect. F. A. S.

Stercoraceous Vomiting which continued sixteen days.—We give an abstract of the case as reported in the Lancet. The patient was a woman, aged 39, of spare habit. She had never suffered from any serious illness before, but for two months had complained occasionally of pain at the epigastrium. Vomiting commenced Sept. 2d, of a bilious character, and recurred every three or four hours. An aperient was given, which did not act, and effervescing mixture every three hours. On the 4th the matters vomited became stercoraceous. An enema brought away scybala. Morphia added to effervescing mixture. During the next few days several enemata were given, the last two without result. The vomiting continued of the same character, and of large

amount, till the 18th, the patient gradually sinking. The abdomen was normal all this time in appearance and on percussion, and there was no pain on pressure. Brandy and beef-tea were given, and opium in pill. On the 17th nitrate of silver and morphia were ordered. On the 18th the vomiting was less, and on the 19th ceased. On the 20th there was copious action per rectum, the matters discharged being similar to the vomit in appearance. After this date she improved in strength gradually, and on the 30th was quite convalescent.

It seems almost incredible that such a mass of fæces should have existed in a woman of spare habit without discovery on careful examination.

Preservation of Vaccine Virus by Glycerine.—Geheimer Rath Mûller, Director of Vaccination at Berlin, observes, in a recent letter, that he had hoped it would not be necessary for him to write any more concerning the advantages of vaccine virus diluted in glycerine. Finding, however, that some prejudices and ignorance still obtain on the subject, and in presence of an epidemic of variola now prevailing in Prussia, where, in many places, practitioners find it impossible to obtain virus in sufficient quantities for revaccination, he feels it incumbent on him to state that a two years experience in the use of his glycerined virus justifies his warmest recommendation of its employment, and that some lymph thus preserved for nearly two years, still retains its efficacy. Of course, those who by carelessness have mixed lymph unfit for use with glycerine, or have mixed good lymph with impure glycerine, may well have been disappointed in the results obtained. He adds, that, on the breaking out of variola in the prisons, two thousand persons were immediately revaccinated, which could never have been done in the month of February without the stores of glycerined lymph supplied by the establishment. Moreover this rapid revaccination arrested at once the progress of the epidemic.—*Medical Times and Gazette.*

Arterial Hypertrophy.—At a numerously attended conversazione lately held at the house of Dr. George Johnson, we had the opportunity, through his courtesy, of inspecting numerous specimens of arteries with hypertrophied walls, in illustration of the subject which he recently brought forward at the Royal Medical and Chirurgical Society. The specimens showed that in many cases of advanced Bright's disease, where the left ventricle of the heart is much hypertrophied, there is also hypertrophy of the muscular coat of small arteries, not only in the kidney, where it has been long recognized, but in various organs of the body. The preparations, which were in most cases the work of Dr. Kelly, consisted of hypertrophied arteries from the kidneys, skin, intestines, muscles, and pia mater. Specimens of normal arteries in various tissues, for comparison, were placed by the side of those altered. The great thickening of the muscular coat in the preparations shown, was quite unmistakable. Dr. Johnson starts a new theory in explanation of this hypertrophy. It is usually thought that the heart becomes hypertrophied in these cases because it has harder work than natural in overcoming the resistance offered by the tissues to the reception of blood loaded with various constituents of the urine; and that the hypertrophy of the renal arteries is designed to aid the heart in its difficult task of forcing the impure blood through the capillaries. Dr. Johnson, on the other hand, believes that the hypertrophy of small arteries in various tissues is intended, not to aid the propulsion of blood (for the contraction of the arteries being tonic, not rhythmical, cannot do this), but to prevent the tissue from receiving too much morbid material. As a result of the contraction of this hypertrophied muscular coat the flow of blood is impeded, more work is thrown upon the heart, the left ventricle of which is consequently hypertrophied. The primary change, therefore, according to Dr. Johnson, occurs at the periphery; the central change results from it. A very interesting field of inquiry is opened out by these ideas. —*Lancet.*

Formation of Petechiæ.—The observations of Cohnheim,* to which we gave especial prominence last week, are exciting much attention among pathologists. Dr. Bastian brought the subject before the Pathological Society on Tuesday last; and demonstrated the passage of the blood cells through the capillaries and into the tissues outside them in the web of the frog's foot. Dr. Bastian referred in detail to the subject of the production of petechial patches in the frog's web, and in the internal organs of frogs and rabbits as a consequence of venous stasis, &c., by escape of the blood cells from the vessels; to the assumption that the capillaries possess apertures in their walls; to the phenomenon of the migration

* See page 31 of this Journal.

of the cells through the vessel-walls by the agency of amœboid processes; to the active changes of form observed to take place in the cells after they arrive at the tissues. Admitting that such changes of form might happen in corpuscles virtually dead, in the ordinary acceptation of the term, as in bloody urine, he gave it as his opinion that the escape of the red corpuscles was not in stasis due entirely to a mechanical cause—the obstruction—but in great measure to an active and inherent power similar to that observed in the case of the white corpuscles, there being no lacunæ in the vascular walls, the corpuscles protruding before the tissues, and finally escaping through an aperture made by the yielding of the walls before the outcoming cell. However, the actual passage of the cells through the capillaries was well seen by those who examined the specimens submitted by Dr. Bastian.—*Lancet.*

Connecticut River Valley Medical Association.—The Annual Meeting of this Society was held at Bellows Falls, Vt., on Wednesday and Thursday, the 6th and 7th inst.

On Wednesday morning at 10 o'clock, the President, Prof. Dixi Crosby, being absent, Dr. Z. G. Harrington of Chester was called to the chair. A nominating committee was appointed, and, in the afternoon, submitted their report, and the following officers were elected:—Dr. H. D. Holton, Brattleboro', *Pres.;* Dr. Geo. B. Twitchell, Keene, N. H., *Vice Pres.;* Dr. F. Whitman, Bellows Falls, Vt., *Recording Sec'y;* Dr. A. B. Crosby, Hanover, N. H., *Cor. Sec'y;* Dr. S. Nichols, Bellows Falls, Vt., *Treasurer;* Drs. W. B. Porter and L. Sawyer, *Auditors;* Drs. Samuel Webber, D. R. Story and Z. G. Harrington, *Committee on Credentials;* Drs. S. G. Jarvis, W. B. Porter, Z. G. Harrington, J. Kittredge, N. G. Brooks, J. H. Goldsmith, O. H. Bradley, B. F. Ketchum, D. R. Story and A. B. Crosby, *Delegates to American Med. Assoc.;* Drs. E. A. Knight and H. H. Palmer, *Delegates to New Hampshire Med. Soc.;* Drs. A. P. Richardson and G. W. Hunt, *Delegates to Vermont Med. Soc.;* Drs. Samuel Webber and Samuel Nichols, *Delegates to Maine Med. Soc.;* Drs. F. Whitman and S. P. Smith, *Dels. to Massachusetts Med. Soc.;* Drs. E. H. Pettengill and L. G. Graves, *Dels. to Rhode Island Med. Soc.;* Drs. S. M. Cummings and M. C. Edmonds, *Dels. to Connecticut Med. Soc.;* Drs. Geo. B. Twitchell and John Crowley, *Dels. to New York Med. Society.*

Prof. Dixi Crosby, the retiring President, followed with his annual address. His subject was *Pelvic and Abdominal Abscesses.* The address was a well written and interesting one, and commanded the most respectful attention of all present. At its conclusion a vote of thanks was tendered to the Professor.

During the session the following gentlemen presented voluntary papers. Dr. Samuel Webber, on Neuralgia; Dr. H. G. McIntire, on Uterine Inflammation in insane women; Dr. W. B. Porter, on several interesting obstetric cases, and one on Ovarian Tumor.

Dr. Thomas Goodwillie exhibited and explained a new and improved instrument for administering anæsthetics, with statement of cases, showing the result of its use.

Drs. S. P. Smith of Alstead, N. H., S. W. Scott of Fayetteville, Vt., Calvin Spencer of East Clarendon, Vt., Jacob H. Putnam of Ludlow, Vt., and Orlando W. Sherwin of Reading, Vt., were elected new members of the Association. On motion it was voted, that at succeeding elections, no one shall be eligible to office in this Association not present at the election.

The July meeting is to be held at Bellows Falls, Vt., and the October one at Brattleboro', Vt. The next annual meeting is to continue two days, and a public dinner is to be given.

Throughout the entire session there was pretty general and free discussion of various medical topics, and the meeting finally adjourned on Thursday, after a session of unusual interest and profit.

Essex North District Medical Society.—Annual Meeting.—At a recent meeting of this Society, after the election of officers for the year, on invitation from Dr. Garland, it was voted to hold a quarterly meeting in July, at Lawrence, at one o'clock, P. M.; also that each member be requested to report some case in writing or verbally that has come under his own observation, or a review of some medical work.

Appointments.—Dr. H. K. Oliver has been appointed one of the Visiting Physicians at the Massachusetts General Hospital. Drs. Hall Curtis and G. G. Tarbell have been appointed Physicians to Out Patients at the Massachusetts General Hospital.

We are requested to state that in the printed programme of the exercises at the next annual meeting of the Massachusetts Medical Society, Dr. Garland's Christian name should be *George W.* instead of "William H."

Selections and Medical Items.

Scarlatina in Paris.—We call attention to the extreme rarity of scarlatina in the hospitals, and to its benignity for some years past. In 1866, there were 35 deaths from scarlatina in all the hospitals. In 1867, the mortality diminished to 8, and the number of subjects attacked from 151 to 84. This very important fact is so much the more remarkable as it is quite peculiar to our country, or at least to the city of Paris. Berlin, with a population of only 656,251, had for the year 1866, 264 deaths from scarlatina; Vienna, with only 590,000 inhabitants, 396; Paris, which contains 1,825,274 inhabitants, had for the same year only 82 deaths, while London, with a population not more than twice as great, had 1,885, or almost twenty-three times as many. If these figures are not disputed, they furnish a proof of the inferiority of the *role* of a true contagion, in comparison with epidemic influence, in the development, the transmission and propagation of the most contagious epidemic maladies.—*Gaz. Heb.*

Traumatic Aneurism of the Arteria Transversalis Faciei.—An interesting case is reported in *La Fraternidad*, No. 31, by Dr. Iborra. The patient, a lad of 18 years of age, presented himself with a tumor upon his left cheek. At the age of 8 years, his teacher had struck him violently on the face with a strap; he lost consciousness at the time, and for some time there remained traces of considerable contusion, occupying the malar and temporal region. At the point where the extremity of the strap had struck the cheek, a slight tumefaction soon appeared, but remained indolent. Seven years afterwards, the tumor, which had gradually enlarged, had acquired such volume as to render the patient uneasy. The diagnosis being made out, the sac was opened, four dilated anastomosing arteries tied, and the parts dressed with charpie saturated with the water of Pagliori. The case was cured. This is, perhaps, the only case of aneurism of this artery on record.—*N. Y. Med. Record.*

Arsenic in the Treatment of Pulmonary Consumption.—The clinical investigations of M. Moutard-Martin lead him to place considerable confidence in the employment of arsenic in the treatment of pulmonary consumption. He finds it more suitable to cases slowly progressive than to such as are attended with fever. He has seen notable amelioration of the patient's condition from the use of arsenic, and in some cases actual suspension of the onward progress of the disease. He administers it in very minute doses, never exceeding two centigrammes, and considers perseverance in its use for a long time necessary to a favorable result.—*Gazette Médicale.*

Estimation of Nicotine.—A process for the estimation of the nicotine contained in tobacco has been devised by M. Leicke. He exhausts the dry tobacco leaves with water acidulated with sulphuric acid, renewing the water three times, and evaporates the solution just to the consistence of an extract. This extract is treated with an equal volume of alcohol, the alcoholic solution filtered, and the residue washed with alcohol. The alcoholic solution contains all the nicotine as sulphate. The solution is evaporated, and the residue obtained from it decomposed by caustic potash in a retort heated by oil to 260° C., the nicotine being received in dilute sulphuric acid.—*Chemical News.*

Viridinic Acid.—This acid may be obtained direct from coffee by pulverizing the beans, extracting them with ether alcohol, to remove fat, and exposing them in moist condition to the air. After a few days the mass, which has assumed a green color, is exhausted with acetic acid and alcohol, which takes up the viridinic acid formed.—*Ibid.*

MEDICAL DIARY OF THE WEEK.

Monday, 9, A.M., Massachusetts General Hospital, Med. Clinic; 10, A.M., Medical Lecture. 9, A.M., City Hospital, Ophthalmic Clinic.
Tuesday, 9, A.M., City Hospital, Medical Clinic; 10, A.M., Medical Lecture. 9 to 11, A.M., Boston Dispensary. 10–11, A.M., Massachusetts Eye and Ear Infirmary.
Wednesday, 10 A.M., Massachusetts General Hospital Surgical Visit. 11 A.M., Operations.
Thursday, 11 A.M., Massachusetts General Hospital, Clinical Surgical Lecture.
Friday, 9, A.M., City Hospital, Ophthalmic Clinic; 10, A.M., Surgical Visit; 11, A.M., Operations. 9 to 11, A.M., Boston Dispensary.
Saturday, 10, A.M., Massachusetts General Hospital, Surgical Visit; 11, A.M., Operations.

A Bulletin of Expected Operations, in both the Hospitals, will be found, weekly, at the office of the Boston Medical and Surgical Journal, and at Messrs. Codman & Shurtleff's, 13 and 15 Tremont Street.

To Correspondents.—Communications accepted:—A Case of Pelvic Cellulitis.—A Case of Rupture of the Uterus and Vagina.

Pamphlets Received.—Alphabetical Lists of the Names of Persons Deceased, Born and Married, in the City of Providence, 1867. Prepared by Edwin M. Snow, M.D., City Registrar.—Report of a Joint Special Committee appointed to consider the matter of Inebriation as a Disease, and the expediency of treating the same at Rainsford Island.

Died,—At Savannah, Ga., March 2, William Gibson, M.D., Emeritus Professor of Surgery in the University of Pennsylvania, aged 83.—In Washington, D. C., on the 5th inst., Prof. Charles Grafton Page, M.D., Examiner in the Patent Office.—In England, recently, Dr. John Elliotson, the founder of the North London Hospital, well known in former years as a medical author, and Professor of the Practice of Medicine in the University of London.

Deaths in Boston for the week ending Saturday noon, May 23d, 84. Males, 48—Females, 36.—Accident, 2—apoplexy, 3—inflammation of the bowels, 2—congestion of the brain, 1—disease of the brain, 2—inflammation of the brain, 1—bronchitis, 6—cancer, 1—consumption, 14—convulsions, 2—croup, 4—debility, 2—dropsy of the brain, 1—dyspepsia, 1—erysipelas, 1—scarlet fever, 6—typhoid fever, 1—gangrene, 1—disease of the heart, 1—insanity, 1—intemperance, 1—disease of the liver, 1—congestion of the lungs, 1—inflammation of the lungs, 5—marasmus, 1—old age, 1—paralysis, 2—premature birth, 4—puerperal disease, 1—teething, 1—trismus nascentium, 1—tumor, 1—ulcer, 1—unknown, 8—whooping cough, 2.

Under 5 years of age, 32—between 5 and 20 years, 8—between 20 and 40 years, 22—between 40 and 60 years, 14—above 60 years, 8. Born in the United States, 62—Ireland, 15—other places, 7.